



1. Description

1.1. Project

| | |
|-----------------|-------------------|
| Project Name | mgmt |
| Board Name | custom |
| Generated with: | STM32CubeMX 6.8.0 |
| Date | 05/07/2023 |

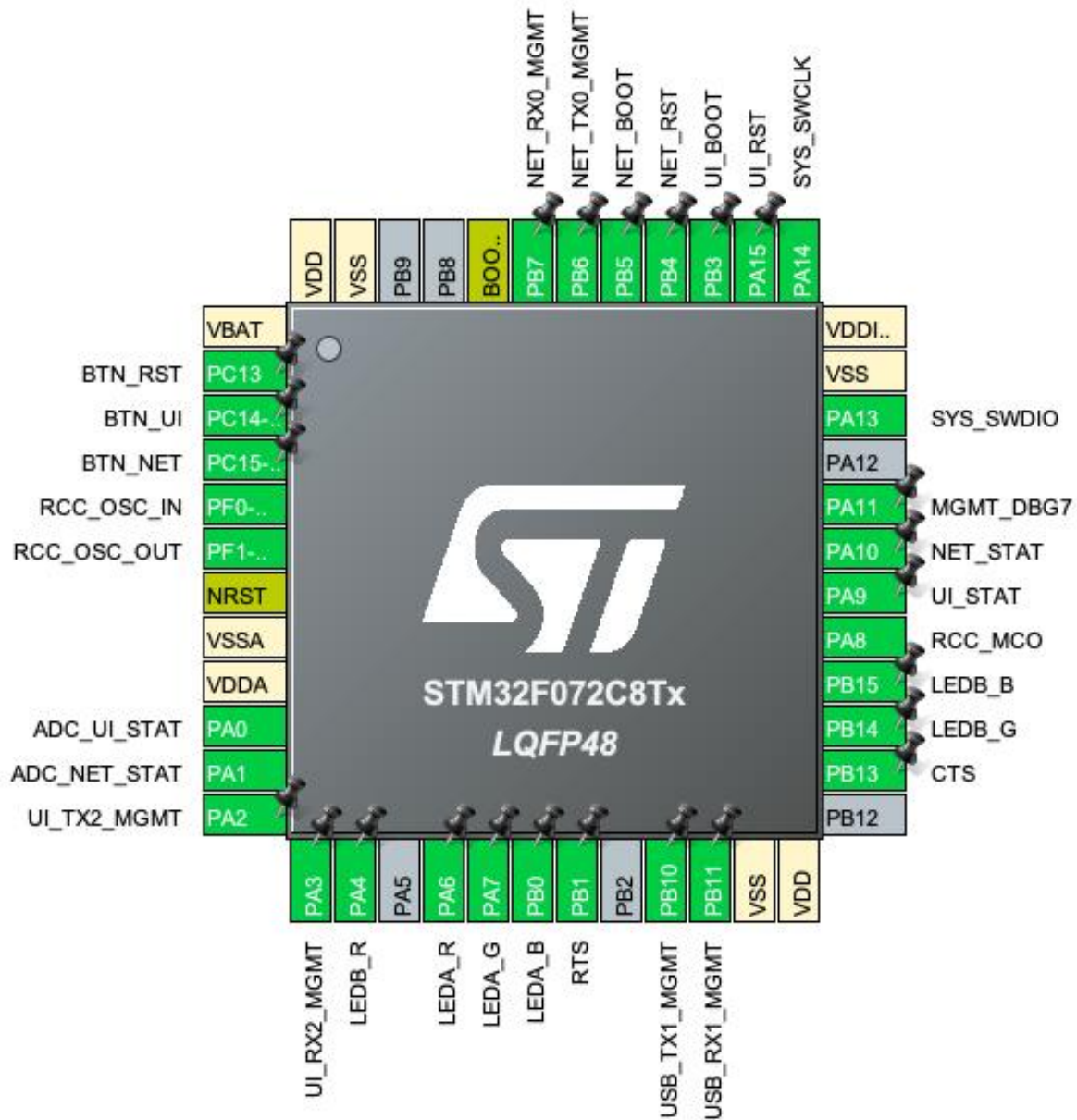
1.2. MCU

| | |
|----------------|---------------|
| MCU Series | STM32F0 |
| MCU Line | STM32F0x2 |
| MCU name | STM32F072C8Tx |
| MCU Package | LQFP48 |
| MCU Pin number | 48 |

1.3. Core(s) information

| | |
|---------|---------------|
| Core(s) | Arm Cortex-M0 |
|---------|---------------|

2. Pinout Configuration



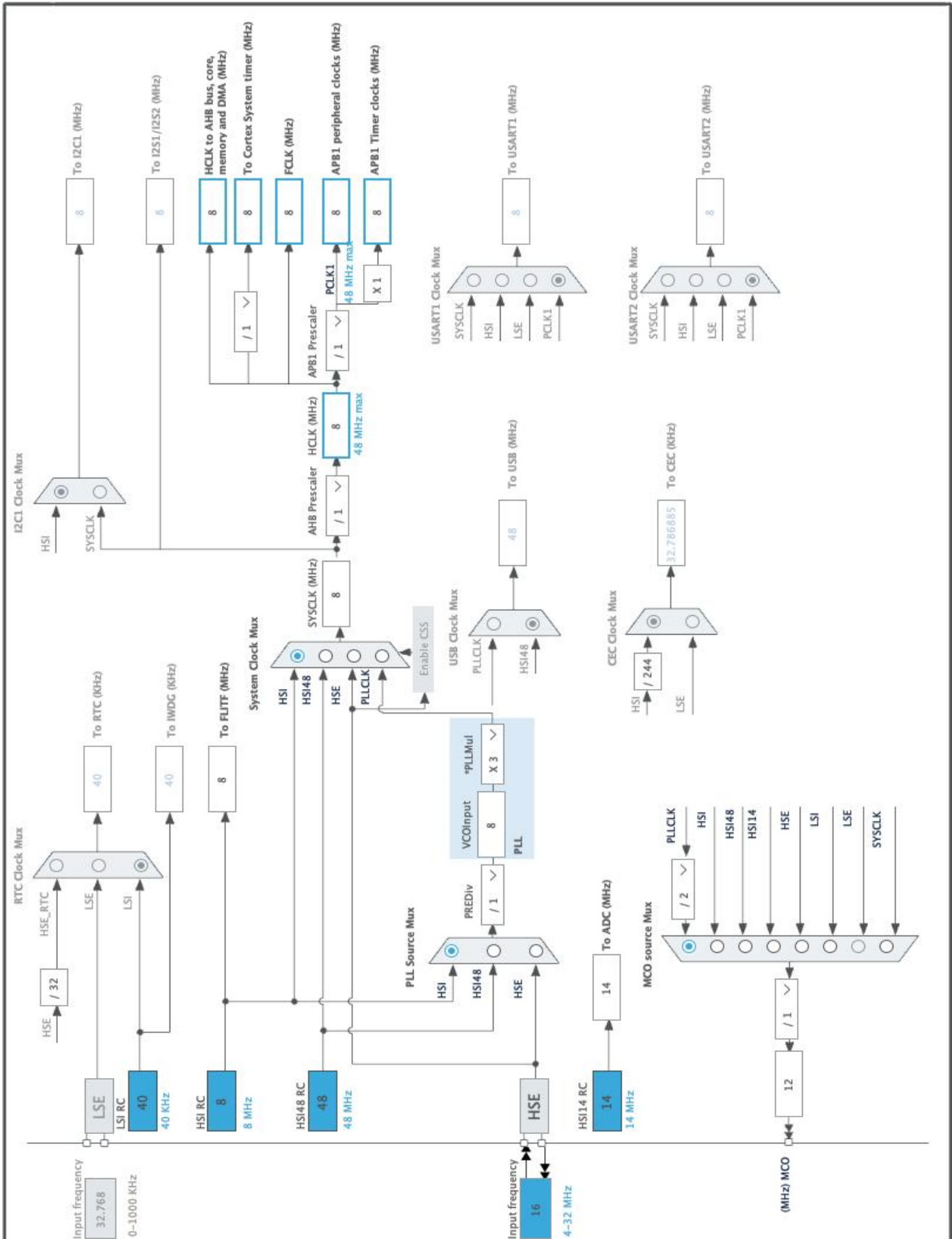
3. Pins Configuration

| Pin Number LQFP48 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|----------------------|---------------------------------------|----------|--------------------------|--------------|
| 1 | VBAT | Power | | |
| 2 | PC13 * | I/O | GPIO_Input | BTN_RST |
| 3 | PC14-OSC32_IN * | I/O | GPIO_Input | BTN_UI |
| 4 | PC15-OSC32_OUT * | I/O | GPIO_Input | BTN_NET |
| 5 | PF0-OSC_IN | I/O | RCC_OSC_IN | |
| 6 | PF1-OSC_OUT | I/O | RCC_OSC_OUT | |
| 7 | NRST | Reset | | |
| 8 | VSSA | Power | | |
| 9 | VDDA | Power | | |
| 10 | PA0 | I/O | ADC_IN0 | ADC_UI_STAT |
| 11 | PA1 | I/O | ADC_IN1 | ADC_NET_STAT |
| 12 | PA2 * | I/O | GPIO_Input | UI_TX2_MGMT |
| 13 | PA3 * | I/O | GPIO_Output | UI_RX2_MGMT |
| 14 | PA4 * | I/O | GPIO_Output | LEDB_R |
| 16 | PA6 * | I/O | GPIO_Output | LEDA_R |
| 17 | PA7 * | I/O | GPIO_Output | LEDA_G |
| 18 | PB0 * | I/O | GPIO_Output | LEDA_B |
| 19 | PB1 * | I/O | GPIO_Input | RTS |
| 21 | PB10 * | I/O | GPIO_Input | USB_TX1_MGMT |
| 22 | PB11 * | I/O | GPIO_Output | USB_RX1_MGMT |
| 23 | VSS | Power | | |
| 24 | VDD | Power | | |
| 26 | PB13 * | I/O | GPIO_Input | CTS |
| 27 | PB14 * | I/O | GPIO_Input | LEDB_G |
| 28 | PB15 * | I/O | GPIO_Input | LEDB_B |
| 29 | PA8 | I/O | RCC_MCO | |
| 30 | PA9 * | I/O | GPIO_Input | UI_STAT |
| 31 | PA10 * | I/O | GPIO_Input | NET_STAT |
| 32 | PA11 * | I/O | GPIO_Output | MGMT_DBG7 |
| 34 | PA13 | I/O | SYS_SWDIO | |
| 35 | VSS | Power | | |
| 36 | VDDIO2 | Power | | |
| 37 | PA14 | I/O | SYS_SWCLK | |
| 38 | PA15 * | I/O | GPIO_Output | UI_RST |
| 39 | PB3 * | I/O | GPIO_Output | UI_BOOT |
| 40 | PB4 * | I/O | GPIO_Output | NET_RST |

| Pin Number LQFP48 | Pin Name (function after reset) | Pin Type | Alternate Function(s) | Label |
|----------------------|---------------------------------------|----------|--------------------------|--------------|
| 41 | PB5 * | I/O | GPIO_Output | NET_BOOT |
| 42 | PB6 * | I/O | GPIO_Input | NET_TX0_MGMT |
| 43 | PB7 * | I/O | GPIO_Output | NET_RX0_MGMT |
| 44 | BOOT0 | Boot | | |
| 47 | VSS | Power | | |
| 48 | VDD | Power | | |

* The pin is affected with an I/O function

4. Clock Tree Configuration



5. Software Project

5.1. Project Settings

| Name | Value |
|-----------------------------------|--|
| Project Name | mgmt |
| Project Folder | /Users/fluffy/src/hactar/firmware/mgmt |
| Toolchain / IDE | Makefile |
| Firmware Package Name and Version | STM32Cube FW_F0 V1.11.4 |
| Application Structure | Advanced |
| Generate Under Root | No |
| Do not generate the main() | No |
| Minimum Heap Size | 0x200 |
| Minimum Stack Size | 0x400 |

5.2. Code Generation Settings

| Name | Value |
|---|---------------------------------------|
| STM32Cube MCU packages and embedded software | Copy only the necessary library files |
| Generate peripheral initialization as a pair of '.c/.h' files | No |
| Backup previously generated files when re-generating | No |
| Keep User Code when re-generating | Yes |
| Delete previously generated files when not re-generated | Yes |
| Set all free pins as analog (to optimize the power consumption) | No |
| Enable Full Assert | No |

5.3. Advanced Settings - Generated Function Calls

| Rank | Function Name | Peripheral Instance Name |
|------|--------------------|--------------------------|
| 1 | SystemClock_Config | RCC |
| 2 | MX_GPIO_Init | GPIO |
| 3 | MX_ADC_Init | ADC |
| 4 | MX_TIM3_Init | TIM3 |

6. Power Consumption Calculator report

6.1. Microcontroller Selection

| | |
|-----------|---------------|
| Series | STM32F0 |
| Line | STM32F0x2 |
| MCU | STM32F072C8Tx |
| Datasheet | DS9826_Rev5 |

6.2. Parameter Selection

| | |
|-------------|-----|
| Temperature | 25 |
| Vdd | 3.6 |

6.3. Battery Selection

| | |
|-------------------|-----------------|
| Battery | Li-SOCL2(A3400) |
| Capacity | 3400.0 mAh |
| Self Discharge | 0.08 %/month |
| Nominal Voltage | 3.6 V |
| Max Cont Current | 100.0 mA |
| Max Pulse Current | 200.0 mA |
| Cells in series | 1 |
| Cells in parallel | 1 |

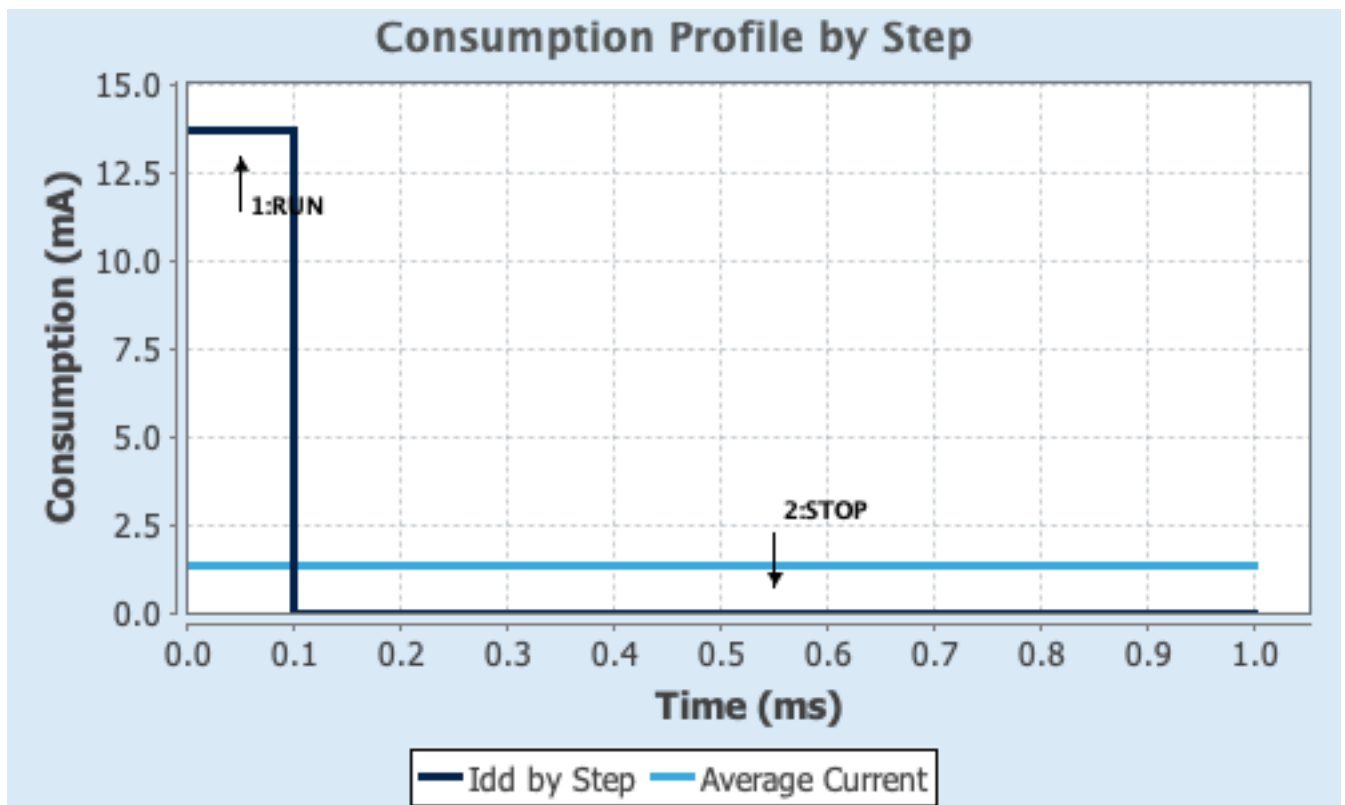
6.4. Sequence

| | | |
|-------------------------------|-------------|--------------|
| Step | Step1 | Step2 |
| Mode | RUN | STOP |
| Vdd | 3.6 | 3.6 |
| Voltage Source | Battery | Battery |
| Range | No Scale | No Scale |
| Fetch Type | FLASH | n/a |
| CPU Frequency | 48 MHz | 0 Hz |
| Clock Configuration | HSE PLL | Regulator LP |
| Clock Source Frequency | 8 MHz | 0 Hz |
| Peripherals | | |
| Additional Cons. | 0 mA | 0 mA |
| Average Current | 13.66 mA | 6.5 μ A |
| Duration | 0.1 ms | 0.9 ms |
| DMIPS | 0.0 | 0.0 |
| Ta Max | 102.34 | 105 |
| Category | In DS Table | In DS Table |

6.5. Results

| | | | |
|---------------|-----------------------------|-----------------|-----------|
| Sequence Time | 1 ms | Average Current | 1.37 mA |
| Battery Life | 3 months, 11 days, 17 hours | Average DMIPS | 0.0 DMIPS |

6.6. Chart



7. Peripherals and Middlewares Configuration

7.1. ADC

mode: IN0

mode: IN1

7.1.1. Parameter Settings:

ADC_Settings:

| | |
|-------------------------------|--------------------------|
| Clock Prescaler | Asynchronous clock mode |
| Resolution | ADC 12-bit resolution |
| Data Alignment | Right alignment |
| Scan Conversion Mode | Forward |
| Continuous Conversion Mode | Disabled |
| Discontinuous Conversion Mode | Disabled |
| DMA Continuous Requests | Disabled |
| End Of Conversion Selection | End of single conversion |
| Overrun behaviour | Overrun data preserved |
| Low Power Auto Wait | Disabled |
| Low Power Auto Power Off | Disabled |

ADC_Regular_ConversionMode:

| | |
|------------------------------------|---|
| Sampling Time | 1.5 Cycles |
| External Trigger Conversion Source | Regular Conversion launched by software |
| External Trigger Conversion Edge | None |

WatchDog:

| | |
|-----------------------------|-------|
| Enable Analog WatchDog Mode | false |
| Low Threshold | 0 |

7.2. RCC

High Speed Clock (HSE): Crystal/Ceramic Resonator

mode: Master Clock Output

7.2.1. Parameter Settings:

System Parameters:

| | |
|-------------------|--------------------|
| VDD voltage (V) | 3.3 |
| Prefetch Buffer | Enabled |
| Flash Latency(WS) | 0 WS (1 CPU cycle) |

RCC Parameters:

| | |
|-------------------------|----|
| HSI Calibration Value | 16 |
| HSI14 Calibration Value | 16 |

| | |
|--------------------------------|------|
| HSE Startup Timeout Value (ms) | 100 |
| LSE Startup Timeout Value (ms) | 5000 |

7.3. SYS

mode: Debug Serial Wire

Timebase Source: SysTick

7.4. TIM3

Trigger Source: ITR0

7.4.1. Parameter Settings:

Counter Settings:

| | |
|---|--------------------|
| Prescaler (PSC - 16 bits value) | 0 |
| Counter Mode | Up |
| Counter Period (AutoReload Register - 16 bits value) | 48000 * |
| Internal Clock Division (CKD) | No Division |
| auto-reload preload | Disable |
| Slave Mode Controller | Slave mode disable |

Trigger Output (TRGO) Parameters:

| | |
|-----------------------------|--|
| Master/Slave Mode (MSM bit) | Disable (Trigger input effect not delayed) |
| Trigger Event Selection | Reset (UG bit from TIMx_EGR) |

*** User modified value**

8. System Configuration

8.1. GPIO configuration

| IP | Pin | Signal | GPIO mode | GPIO pull/up pull down | Max Speed | User Label |
|------|----------------|-------------|------------------------------|-----------------------------|---------------|--------------|
| ADC | PA0 | ADC_IN0 | Analog mode | No pull-up and no pull-down | n/a | ADC_UI_STAT |
| | PA1 | ADC_IN1 | Analog mode | No pull-up and no pull-down | n/a | ADC_NET_STAT |
| RCC | PF0-OSC_IN | RCC_OSC_IN | n/a | n/a | n/a | |
| | PF1-OSC_OUT | RCC_OSC_OUT | n/a | n/a | n/a | |
| | PA8 | RCC_MCO | Alternate Function Push Pull | No pull-up and no pull-down | Low | |
| SYS | PA13 | SYS_SWDIO | n/a | n/a | n/a | |
| | PA14 | SYS_SWCLK | n/a | n/a | n/a | |
| GPIO | PC13 | GPIO_Input | Input mode | Pull-up * | n/a | BTN_RST |
| | PC14-OSC32_IN | GPIO_Input | Input mode | Pull-up * | n/a | BTN_UI |
| | PC15-OSC32_OUT | GPIO_Input | Input mode | Pull-up * | n/a | BTN_NET |
| | PA2 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | UI_TX2_MGMT |
| | PA3 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | High * | UI_RX2_MGMT |
| | PA4 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | LEDB_R |
| | PA6 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | LEDA_R |
| | PA7 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | LEDA_G |
| | PB0 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | LEDA_B |
| | PB1 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | RTS |
| | PB10 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | USB_TX1_MGMT |
| | PB11 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | High * | USB_RX1_MGMT |
| | PB13 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | CTS |
| | PB14 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | LEDB_G |
| | PB15 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | LEDB_B |
| | PA9 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | UI_STAT |
| | PA10 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | NET_STAT |
| | PA11 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | MGMT_DBG7 |
| | PA15 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | UI_RST |
| | PB3 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | UI_BOOT |
| | PB4 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | NET_RST |
| | PB5 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | Low | NET_BOOT |
| | PB6 | GPIO_Input | Input mode | No pull-up and no pull-down | n/a | NET_TX0_MGMT |
| | PB7 | GPIO_Output | Output Push Pull | No pull-up and no pull-down | High * | NET_RX0_MGMT |

8.2. DMA configuration

nothing configured in DMA service

8.3. NVIC configuration

8.3.1. NVIC

| Interrupt Table | Enable | Preenmption Priority | SubPriority |
|--|--------|----------------------|-------------|
| Non maskable interrupt | true | 0 | 0 |
| Hard fault interrupt | true | 0 | 0 |
| System service call via SWI instruction | true | 0 | 0 |
| Pendable request for system service | true | 0 | 0 |
| System tick timer | true | 3 | 0 |
| PVD and VDDIO2 supply comparator interrupts through EXTI lines 16 and 31 | unused | | |
| Flash global interrupt | unused | | |
| RCC and CRS global interrupts | unused | | |
| ADC and COMP interrupts (COMP interrupts through EXTI lines 21 and 22) | unused | | |
| TIM3 global interrupt | unused | | |

8.3.2. NVIC Code generation

| Enabled interrupt Table | Select for init sequence ordering | Generate IRQ handler | Call HAL handler |
|---|-----------------------------------|----------------------|------------------|
| Non maskable interrupt | false | true | false |
| Hard fault interrupt | false | true | false |
| System service call via SWI instruction | false | true | false |
| Pendable request for system service | false | true | false |
| System tick timer | false | true | true |

* User modified value

9. System Views

9.1. Category view

9.1.1. Current

Middleware

System Core

Analog

Timers

Connectivity

Multimedia

Computing

DMA

ADC 

TIM3 

GPIO 

NVIC 

RCC 

SYS 

10. Docs & Resources

| Type | Link |
|-------------------|---|
| IBIS models | https://www.st.com/resource/en/ibis_model/stm32f0_ibis.zip |
| System View | https://www.st.com/resource/en/svd/stm32f0_svd.zip |
| Description | |
| IBIS models | https://www.st.com/resource/en/ibis_model/stm32f0_ibis.zip |
| System View | https://www.st.com/resource/en/svd/stm32f0_svd.zip |
| Description | |
| Presentations | https://www.st.com/resource/en/product_presentation/gt_stm32f0-io.pdf |
| Presentations | https://www.st.com/resource/en/product_presentation/stm32-stm8_embedded_software_solutions.pdf |
| Presentations | https://www.st.com/resource/en/product_presentation/stm32_eval-tools_portfolio.pdf |
| Presentations | https://www.st.com/resource/en/product_presentation/stm32_stm8_functional-safety-packages.pdf |
| Presentations | https://www.st.com/resource/en/product_presentation/stm32-usb-c-pd-solutions-presentation.pdf |
| Presentations | https://www.st.com/resource/en/product_presentation/stm32-stm8_software_development_tools.pdf |
| Training Material | https://www.st.com/resource/en/sales_guide/sg_sc2155.pdf |
| Brochures | https://www.st.com/resource/en/brochure/breveco0518.pdf |
| Brochures | https://www.st.com/resource/en/brochure/brstm32f0.pdf |
| Flyers | https://www.st.com/resource/en/flyer/flstm32nucleo.pdf |
| Flyers | https://www.st.com/resource/en/flyer/flstmcsuite.pdf |
| Flyers | https://www.st.com/resource/en/flyer/fldpstpfc11120.pdf |
| Product | https://www.st.com/resource/en/certification_document/stm32_authentication_can.pdf |
| Certifications | |
| Application Notes | https://www.st.com/resource/en/application_note/an1181-electrostatic-discharge-sensitivity-measurement-stmicroelectronics.pdf |
| Application Notes | https://www.st.com/resource/en/application_note/an1709-emc-design- |

guide-for-stm8-stm32-and-legacy-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2606-stm32-microcontroller-system-memory-boot-mode-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2639-soldering-recommendations-and-package-information-for-leadfree-ecopack-mcus-and-mpus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2834-how-to-get-the-best-adc-accuracy-in-stm32-microcontrollers-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an2945-stm8s-and-stm32-mcus-a-consistent-832bit-product-line-for-painless-migration-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3070-managing-the-driver-enable-signal-for-rs485-and-iolink-communications-with-the-stm32s-usart-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3126-audio-and-waveform-generation-using-the-dac-in-stm32-products-stmicroelectronics.pdf

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Application Notes https://www.st.com/resource/en/application_note/an3236-increase-the-number-of-touchkeys-for-touch-sensing-applications-on-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3364-migration-and-compatibility-guidelines-for-stm32-microcontroller-applications-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3371-using-the-hardware-realtime-clock-rtc-in-stm32-f0-f2-f3-f4-and-l1-series-of-mcus-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an3960-esd-considerations-for-touch-sensing-applications-on-mcus-stmicroelectronics.pdf

- Application Notes https://www.st.com/resource/en/application_note/an4013-stm32-crossseries-timer-overview-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4067-calibrating-stm32f0x1-stm32f0x2-and-stm32f0x8-lines-internal-rc-oscillators-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4080-getting-started-with-stm32f0x1x2x8-hardware-development-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4088-migrating-between-stm32f1-and-stm32f0-series-microcontrollers-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4099-implementation-of-transmitters-and-receivers-for-infrared-remote-control-protocols-with-mcus-of-the-stm32f0-and-stm32f3-series-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4221-i2c-protocol-used-in-the-stm32-bootloader-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4229-how-to-implement-a-vocoder-solution-using-stm32-microcontrollers-stmicroelectronics.pdf
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- Application Notes https://www.st.com/resource/en/application_note/an4299-improve-conducted-noise-robustness-for-touch-sensing-applications-on-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4310-sampling-capacitor-selection-guide-for-touch-sensing-applications-on-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4312-design-with-surface-sensors-for-touch-sensing-applications-on-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4316-tuning-a-touch-sensing-application-on-mcus-stmicroelectronics.pdf
- Application Notes https://www.st.com/resource/en/application_note/an4566-extending-the-dac-performance-of-stm32-microcontrollers-stmicroelectronics.pdf

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Application Notes https://www.st.com/resource/en/application_note/an4705-migration-guidelines-from-pic18-to-stm32f0-series-with-software-expansion-for-stm32cube-stmicroelectronics.pdf

Application Notes https://www.st.com/resource/en/application_note/an4711-usb-audio-bridge-example-with-stm32f0-mcus-stmicroelectronics.pdf

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with-touch-sensing-control-on-stm32-microcontrollers-
stmicroelectronics.pdf

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Application Notes https://www.st.com/resource/en/application_note/an1202_freertos_guide-for_related_Tools_freertos-guide-stmicroelectronics.pdf
& Software

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& Software

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